

WHAT IS CLAIMED IS:

1                   1.       A method for storing data in a streaming media cache including disk  
2 memory comprises:

3                   receiving a first plurality of data packets from an upstream server, the data  
4 packets comprising payload data and meta data, wherein the meta data for each data packet  
5 from the first plurality of data packets indicate a first encoding scheme for the payload data;

6                   receiving a second plurality of data packets from the upstream server, the data  
7 packets comprising payload data and meta data, wherein the meta data for each data packet  
8 from the second plurality of data packets indicate a second encoding scheme for the payload  
9 data;

10                  storing a first set of data packets in a buffer from a series of data packets  
11 comprising the first plurality of data packets and the second plurality of data packets, until the  
12 buffer is full; and

13                  storing the first set of data packets to the disk memory when the meta data for  
14 each data packet in the first set of data packets indicates only one encoding scheme for the  
15 payload data.

1                   2.       The method of claim 1 wherein the buffer stores a set number of data  
2 packets; and

3                   wherein the method further comprises:

4                   storing a second set of data packets in the buffer from the series of data  
5 packets, wherein data packets from the second set of data packets are received after data  
6 packets the first set of data packets; and

7                   storing the second set of data packets to the disk memory when the meta data  
8 for each data packet in the second set of data packets indicates only one encoding scheme for  
9 the payload data.

1                   3.       The method of claim 1  
2 wherein each data packet in the first set of data packets indicates only the first  
3 encoding scheme; and

4                   wherein the first set of data packets is stored to the disk memory.

1                   4.       The method of claim 2

2 wherein the meta data for data packets in the second set of data packets  
3 indicates payload data in the first encoding scheme and the second encoding scheme; and  
4 wherein the second set of data packets is not stored to the disk memory.

1 5. The method of claim 1 further comprising:  
2 sending a request to the upstream server for data packets in the second  
3 encoding scheme.

1 6. The method of claim 1 wherein storing the first set of data packets in  
2 the buffer comprises storing data packets from the series of data packets based upon data  
3 packet presentation time, in the buffer, until the buffer is full.

1 7. The method of claim 1 further comprising  
2 sending the first plurality of data packets to a downstream client; and  
3 sending the second plurality of data packets to the downstream client.

1 8. A streaming media cache including disk memory comprises:  
2 a buffer configured to receive a first plurality of data packets from a media  
3 server, the data packets comprising payload data and meta data, wherein the meta data for  
4 each data packet from the first plurality of data packets indicate a first encoding scheme for  
5 the payload data, wherein the buffer is also configured to receive the second plurality of data  
6 packets from the media server, wherein the meta data for each data packet from the second  
7 plurality of data packets indicate a second encoding scheme for the payload data, and wherein  
8 the buffer is configured to store a first set of data packets from a series of data packets  
9 comprising the first plurality of data packets and the second plurality of data packets; and  
10 a disk memory configured to store the first set of data packets from the buffer  
11 when the meta data for each data packet in the first set of data packets indicates only one  
12 encoding scheme for the payload data in the first set of data packets.

1 9. The streaming media cache of claim 8 wherein the buffer is configured  
2 to store a set number of data packets;  
3 wherein the buffer is also configured to store a second set of data packets from  
4 the series of data packets, wherein data packets from the second set of data packets have  
5 presentation time stamps later than data packets the first set of data packets; and

wherein the disk memory is configured to store the second set of data packets when the meta data for each data packet in the second set of data packets indicates only one encoding scheme for the payload data in the second set of data packets

10. The streaming media cache of claim 8 wherein each data packet in the first set of data packets indicates only the first encoding scheme or only the second encoding scheme.

11. The streaming media cache of claim 9 wherein the meta data for data packets in the second set of data packets indicates payload data in the first encoding scheme and in the second encoding scheme

12. The streaming media cache of claim 8 wherein the first encoding scheme and the second encoding scheme have different bit rates.

13. The streaming media cache of claim 8 further comprising a indicator unit configured to determine whether the disk memory stores the second plurality of data packets.

14. The streaming media cache of claim 8 further comprising an output portion configured to stream the first plurality of data packets to a client system and configured to stream the second plurality of data packets to the client system.

15. A method for operating a streaming media cache comprises:  
receiving a series of streaming media data packets from an upstream server, each of the series of streaming media data packets having media data encoded in one of a plurality of encoding formats;  
forming bundles of data packets from the series of streaming media data packets; and  
storing bundles of data packets into a disk memory when every data packet in each bundle have a similar encoding format.

16. The method of claim 15 wherein encoding formats have different parameters selected from the group: bit rate, bit depth, thinning parameters and output resolution.

1                    17.     The method of claim 16 wherein a first data packet in a bundle of data  
2 packets has an encoding rate lower than a second data packet in the bundle.

1                    18.     The method of claim 16 wherein all data packets in a bundle of data  
2 packets have identical encoding formats.

1                    19.     The method of claim 15 further comprising:  
2                    sending a request for streaming media data packets in a first encoding format  
3 from the upstream server; and  
4                    sending a request for streaming media data packets in a second encoding  
5 format from the upstream server.

1                    20.     The method of claim 15 wherein a bundle of data packets stored into  
2 the disk memory is directly accessible by a file system in the streaming media cache.